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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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William R. Hancock

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06/06/2006

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EXAMINER

LUU, MATTHEW

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/671,099	Applicant(s) HANCOCK, WILLIAM R.	
	Examiner LUU MATTHEW	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election Without Traverse

Applicant's election without traverse of Group II, claims 13-20 in the reply filed on March 16, 2006 is acknowledged.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "line profile that is applied to each column of the texture to reduce aliasing effects" as recited in claim 14; "the texture is applied symmetrical about a midline of the trapezoids" as recited in claim 15; "a reverse perspective view transformation to individual columns of texels of the texture" as recited in claim 17; "wherein each column of texels represents a single radial bound spatially by trapezoid upper and lower chords" as recited in claim 18; "selecting a texture from a number of textures based on the size of the radius and line width of the arc" as recited in claim 19, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-20 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 13, the method of representing an arc comprising the steps of "selecting multiple vertices"; "obtaining trapezoids"; "obtaining a texture"; "representing the trapezoids as triangles"; and "mapping the texture" were performed by the algorithms as disclosed in specification, sections [28, 33, and 36-43].

Therefore, the above claimed limitations describe nothing more than the manipulation of basic mathematical constructs, the paradigmatic "abstract idea".

Furthermore, the claimed invention fails to produce a useful, concrete and tangible result. In other words, the claim fails to produce a final result achieved by the

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claimed invention is useful, such that the object is rendered into pixels for display on a display device.

Dependent claims 14-20 are considered rejected for incorporating the defects from their respective parent claim 1 by dependency.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 13, it is unclear what exactly the means or module for performing the steps of: "selecting multiple vertices"; 'obtaining trapezoids'; "obtaining a texture"; "representing the trapezoids as triangles"; and "mapping the texture".

It is unclear how exactly to "selecting multiple vertices"; 'obtaining trapezoids'; "obtaining a texture"; "representing the trapezoids as triangles"; and "mapping the texture" as recited in claim 13.

Regarding claim 14, it is unclear what exactly is a “line profile” that is applied to each column of the texture to reduce aliasing effects. What exactly is the “column texture”? How exactly “each column of the texture” is used to reduce aliasing effects without using the row of the texture being used?

Regarding claim 15, it is unclear how exactly “a column” of texels transitioning from dark to light to dark without using ‘a row’ of texels. What is the particular “column” of texels being used.

Regarding claim 16, it is unclear how the texture is applied symmetrical about a midline of the trapezoids.

Regarding claim 17, it is unclear where exactly in the specification and drawings that describes “a reverse perspective view transformation to individual columns of texels of the texture”. What is the difference between “a reverse perspective view” and a “perspective view”?

Regarding claim 18, it is unclear where exactly in the specification and drawings that describes “wherein each column of texels represents a single radial bound spatially by trapezoid upper and lower chords”.

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Regarding claim 19, it is unclear where exactly in the specification and drawings that describes “selecting a texture from a number of textures based on the size of the radius and line width of the arc”.

Regarding claim 20, it is unclear what is “a radial bounded by the top and bottom of the trapezoids”.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 16, the limitation “wherein the texture is symmetrical about a midline of the trapezoids”, is indefinite. The term “about” is invalid for indefiniteness sine there was nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term “about”.

Amaen v. Chuaai Pharmaceutical Co. Ltd., 927 F.2d 1200, 18 UsPQ2d 1016 (Fed. Cir. 1991).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-17 and 20, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Trow et al (5,461,706) in view of Michail et al (US 2004/0263516) (cited with the previous non-final rejection)

Regarding claim 13, as best understood, Trow discloses (Figs. 2 and 3) a method of representing an arc (C0), the method comprising;

selecting multiple vertices (Fig. 3, (L0P0) and (P3R3) of the arc (C1-Cr));

obtaining trapezoids ((P0-P3), and (P0, L1-R2 and P3)) corresponding to the vertices.

Trow further discloses (Fig. 4A and 4B) obtaining a multiple of rows and columns texture mapping (Column 7, lines 25-26).

The only difference between the disclosure of Trow and the claimed invention is that the claim requires representing the trapezoids as triangles and mapping the texture to the triangles.

However, Michail discloses (Fig. 9) a method of representing the trapezoids (523) as triangles (900 and 902) and mapping the texture to the triangles (Sections 58, 62, 65 and 69).

Therefore, it would have been obvious to a person of ordinary skill in the art to use the texture maps for mapping texture to triangles, as taught by Michail, into the a method for representing an arc of Trow to provide a pictorial representation of the arc through superposition of texture maps. Furthermore, the method for rendering or mapping a primitive by dividing the primitive into trapezoids and triangles is well known in the art (See Michail, the Abstract).

Regarding claim 14, Michail also teaches a Gouraud shading technique for reducing line anti-aliasing (See Abstract and sections 69-70).

Regarding claim 15, Michail further discloses different shading and colors applied to the edge line profile of the triangles (Sections 69-70).

Regarding claim 16, it is an obvious design choice to apply texture symmetrically about a midline of the trapezoids since it only depends on the user's desire.

Regarding claim 17, applying a reverse perspective view transformation of a graphics image is well known in the art.

Regarding claim 20, since Michail teach the method for rendering or mapping a primitive by dividing the primitive into trapezoids and triangles (Abstract), it would have been obvious to the person of ordinary skill in the art to recognize that a rectangle is merely another shape of the primitive or the trapezoids. Furthermore, the geometric shape of the texture is only an obvious design choice since it is not a critical to the function of the device.

Claim Rejections - 35 USC § 103

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trow in view of Michail as applied to claim 13 above, and further in view of Foley (Computer Graphics: Principles and Practice, Second Edition).

Regarding claims 18-19, Foley discloses (Fig. 11.27, pages 500-501) a multiple variation for forming a trapezoid in accordance with the arc or the curves.

It would have been obvious to the person of ordinary skill in the art to use the technique for forming the trapezoid in accordance with the arc of Foley into the method for representing an arc of Trow since this is only an obvious design choice and conventional in the art.

Response to Arguments

Applicant's arguments with respect to claims 13-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUU MATTHEW whose telephone number is (571) 272-7663. The examiner can normally be reached on Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JACK KEITH can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M. Luu



**MATTHEW LUU
PRIMARY EXAMINER**